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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,268	12/15/2003	Dennis Tseng	MR1957-814	1494
4586	7590	09/22/2004	EXAMINER	
ROSENBERG, KLEIN & LEE 3458 ELLICOTT CENTER DRIVE-SUITE 101 ELLICOTT CITY, MD 21043			NGUYEN, LINH V	
			ART UNIT	PAPER NUMBER
			2819	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/734,268

Applicant(s)

TSENG, DENNIS

Examiner

Linh V. Nguyen

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/15/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. This office action is in response to application No. 10/734,268 filed on 12/15/03.

Claims 1 – 5 are pending on this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA), in view of Wang et al. U.S. Patent No. 6,194,708.

Regarding claim 1, Fig. 1 of AAPA discloses a photoconductive encoder wheel, comprising: a grating cogwheel (65); a sensor (S1, S2); two light sources perpendicular to each other (70, 60); and an incident surface (69, Page 2 lines 5 - 6) of the grating cogwheel (65) surrounding a protruding surface (67, Page 2 line 4), and a plurality of protruding wheel parts (66) being divided in equal and surrounding the grating cogwheel (65) for focusing light of a light source (60) by the protruding surface (67) of the grating cogwheel (65); wherein the light is refracted to corresponding protruding wheel parts (Page 2 lines 7 – 9), the light being transmitted to the sensor (Page 2 lines 9 – 10) to generate different phase sequence signals (Page 2 lines 10 – 12).

However the plurality protruding wheel parts (66) of AAPA fails to disclose arc-shapes for focusing the light again.

Fig. 2 of Wang et al. disclose a light conductive encode cogwheel (Col. 1 lines 65 – 67) comprising wheel parts having arc-shapes (25) for focusing the light again (Col. 2 lines 29 – 34).

AAPA and Wang et al. are common subject matter for light encoder wheel. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the square shapes encoder wheel of AAPA with the arc-shapes encoder wheel of Wang et al. for the purpose of focusing the light again, therefore the interference will be minimized when working beam form the encoder wheel projected to the light detector (Wang et al. Col. 2 lines 32 – 36).

Regarding claim 2, AAPA modified by Wang et al. as applied to claim 1 above further disclose wherein the grating cogwheel (AAPA, Fig. 2A [65]) further comprises a disk-shaped housing (Fig. 2A [67]) and a cylinder (Fig. 2A [68]) with a columnar space therein protrudes from a center of the housing (AAPA, Page 2 lines 4 – 5).

Regarding claim 3, modified AAPA as applied to claim 1 above, fail to disclose wherein the grating cogwheel is made of light-transparent materials.

Fig. 2 of Wang et al. disclose a light conductive cogwheel encoder (Col. 1 lines 65 – 67) having cogwheel is made of light transparent material (Col. 2 lines 12 – 14, discloses “lens”. By Webster Dictionary: “lens” is a piece of transparent material as glass).

AAPA and Wang et al. are common subject matter for light encoder wheel. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the light-transparent-material cogwheel of Wang et al. into the cogwheel of modified AAPA for the purpose of minimized interference when working beam from the encoder wheel projected to the light detector (Wang et al. Col. 2 lines 30 – 36).

Regarding claim 4, AAPA modified by Wang et al. as applied to claim 1 above further disclose wherein the housing of the grating cogwheel (AAPA, Fig. 2B [27]) includes a refracting space (AAPA, Fig. 2B [671]) to conduct light focused by the protruding surface to the protruding wheel parts (AAPA, Page 2 lines 7 – 10).

Allowable Subject Matter

4. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior arts fail to teach or suggest that plurality of oblique-cone spaces is located around the circumference of the housing and set concavely in the housing, and an inclined surface is between each oblique-cone space and the housing to refract the light from the light source to the sensor.

Cited References

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references relate to light conductive cogwheel encoder.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh Van Nguyen whose telephone number is (571) 272-1810. The examiner can normally be reached from 8:30 – 5:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Tokar can be reached at (571) 272-1812. The fax phone numbers for the organization where this application or proceeding is assigned are (703-872-9306) for regular communications and (703-872-9306) for After Final communications.

09/12/2004

Linh Van Nguyen

Art Unit 2819

A handwritten signature in black ink, appearing to read 'Linh Van Nguyen', is written over the printed name.